

What is claimed is:

1. A step-up transformer for magnetron driving, comprising:

5 a magnetic circuit, including a middle core section, an outer core section and a coupling core section for coupling the middle core section and the outer core section, formed by an arrangement of two ferrite cores opposed to each other with a gap interposed therebetween, and

10 a primary winding and a secondary winding arranged to surround the middle core respectively,

wherein a sectional area of the middle core is increased;

a number of winds in a radial direction of the primary winding to be wound around the middle core is increased and
15 a number of winds in an axial direction is decreased;

a number of winds in a radial direction of the secondary winding is increased and a number of winds in an axial direction is decreased;

the primary winding and the secondary winding are
20 provided close to each other interposing an insulator, and

a sectional area of the outer core is set to be smaller than that of the middle core.

2. A step-up transformer for magnetron driving according to Claim 1, wherein sectional area of the outer core is set to be same as or smaller than a half of the sectional area
5 of the middle core.

3. A step-up transformer for magnetron driving according to Claim 1, wherein the two ferrite cores include two U-shaped cores, or one U-shaped core and one I-shaped core.

10

4. The step-up transformer for magnetron driving according to Claim 3, wherein shapes of the two U-shaped cores are identical to each other.

15 5. The step-up transformer for magnetron driving according to Claim 1, wherein each of sectional shapes of the middle core section and the outer core section is an oval including a circle or a polygon.

20

6. The step-up transformer for magnetron driving according to Claim 5, wherein, in such a case that

a height in the case in which the middle core section takes a sectional shape of a polygon is represented by h1,
5 or a diameter in a direction of a height in the case in which the sectional shape is an oval including a circle is represented by D1, and

a height in the case in which the outer core section takes a sectional shape of a polygon is represented by h2 or
10 a diameter in a direction of a height in the case in which the sectional shape is an oval including a circle is represented by D2,

the values of h1, D1, h2 and D2 are set in such a manner that the following formulae can be established:

15 $h2 < D1, h2 < h1, D2 < D1 \text{ or } D2 < h1.$